

## CDK9/CycT1

Cyclin dependent kinase 9 / CyclinT1

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK9

**Synonyms:** C-2k; CDC2L4; PITALRE; TAK; CDC2-related kinase

**Product No.:** 0371-0345-1

**Lot:** 008

**Description:** Coexpression of human CDK9, full length, amino acids M<sub>1</sub>-F<sub>372</sub> (as in [NCBI/Protein](#) entry NP\_001252.1), N-terminal GST-HIS<sub>6</sub> fusion protein with a Thrombin cleavage site, and human CycT1, full length, amino acids M<sub>1</sub>-K<sub>726</sub> (as in [NCBI/Protein](#) entry NP\_001231.2), N-terminal HIS<sub>6</sub> fusion protein with a Thrombin cleavage site, both expressed in Sf9 insect cells

**Product identity:** CDK9/CycT1 Lot 008, has been verified by mass spectroscopy LC-ESI-MS/MS

**Theoretical MW<sub>GST-CDK9</sub>:** 72,173 Da

**Theoretical MW<sub>CycT1</sub> :** 85,441 Da

**Expression host:** Sf9 insect cells

**Purification:** GST-Affinity Chromatography

**Activation:** by co-expression with CycT1

**Storage buffer:** 50 mM HEPES pH 7.5, 100 mM NaCl, 5 mM DTT, 15 mM reduced glutathione, 20 % glycerol

**Storage temperature:** -80°C

For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

**Protein concentration:** 0.100 µg/µl

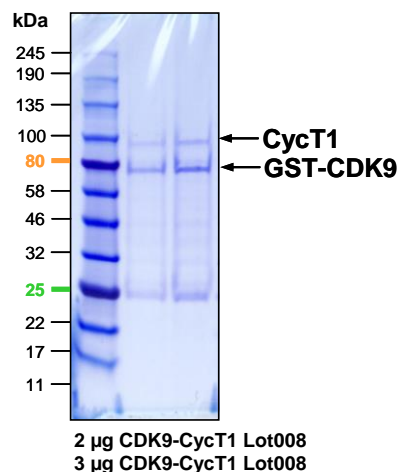
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**Biochemical Parameters:**

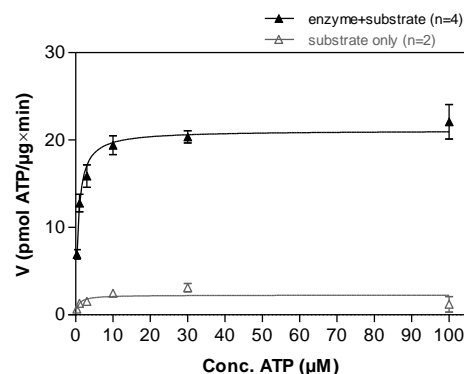
Specific kinase activity (P<sub>i</sub> transfer): 21 pmol/µg x min

ATP-K<sub>M</sub>: 0.7 µM

**CDK9/CycT1 Lot 008:**  
Coomassie stain



**CDK9/CycT1 Lot 008:**  
Determination of V<sub>max</sub> and K<sub>M</sub> value for ATP



**Determination of K<sub>M</sub> value & Specific activity:**

- Assay conditions:
  - 60 mM HEPES-NaOH, pH 7.5
  - 3 mM MgCl<sub>2</sub>
  - 3 mM MnCl<sub>2</sub>
  - 3 µM Na-orthovanadate
  - 1.2 mM DTT
  - 50 µg/ml PEG<sub>20,000</sub>
  - ATP (variable)
  - Substrate: RB-CTF, 200 µg/ml
  - Kinase: 4.0 µg/m
- Filter binding assay
- MSFC membrane (Millipore)

**Additional assay technology:**

CDK9/CycT1 Lot 008 was also successfully tested by ProQinase for the use with the ADP-Glo™ Kinase assay from Promega. ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

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## CDK9-CycT1

Product No.: 0371-0345-1

GST-CDK9 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSM	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGQWQATF	GGGDHPPKSD	PMGHHHHHHG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSRMAKQY	DSVECPFCDE	VSKYEKLAKI	QQGTFGVEVFK	ARHRKTGQKV	300
301	ALKKVLME	KEGFPITALR	EIKILQLLKH	ENVVNLIEIC	RTKASPYNRC	KGSIYLVFDF	360
361	CEHDLA	NVLVKFTLSE	IKRVMQMLLN	GLYYIHRNKI	LHRDMKAANV	LITRDGVLKL	420
421	ADFLARAFS	LAKNSQPNRY	TNRVVTLWYR	PELLLGERD	YGPPIDLWGA	GCIMAEMWTR	480
481	SPIMQGNTEQ	HQLALISQLC	GSITPEVWPN	VDNYELYEKL	ELVKGQKRKV	KDRLKAYVRD	540
541	PYALDLIDKL	LVLDPAQRID	SDDALNHDFE	WSDPMPSDLK	GMLSTHLTSM	FEYLAPPRRK	600
601	GSQITQOSTN	QSRNPATTNQ	TEFERVF				660

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: CDK9

CDK9 wt <sup>1</sup> Amino Acid Sequence							
1	MAKQYDSVEC	PFCDEVSKYE	KLAKIGQGTF	GEVFKARHRK	TGQKVALKKV	LMENEKEGFP	60
61	ITALREIKIL	QLLKHENVVN	LIEICRTKAS	PYNRCKGSIY	LVDFCEHDL	AGLLSNVLVK	120
121	FTLSEIKRVM	QMLLNGLYYI	HRNKILHRDM	KAANVLITRD	GVLKLAFLGL	ARAFSLAKNS	180
181	QPNRYTNRV	TLWYRPELL	LGERDYGPPI	DLWGAGCIMA	EMWTRSPIMQ	GNTAQHQLAL	240
241	ISQLCGSITP	EVWPNVDN	LYEKLELVKG	QKRKVKDRLK	AYVRDPYALD	LIDKLLVLDP	300
301	AQRIDSDDAL	NHDFFWSDPM	PSDLKGM	HLTSMFEYLA	PPRRKGSQIT	QQSTNQSRNP	360
361	ATTNQTEFER	VF					420

blue: CDK9 sequence expressed in recombinant protein

<sup>1</sup>[NCBI/Protein](#) accession number NP\_001252.1

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**CycT1 Recombinant Fusion Protein Amino Acid Sequence**

1	MSPIDPMG <b>HH</b> <b>HHHH</b> GRRRAS VAAGIL <b>LVPRG</b> <b>SP</b> GLDGIYAR GIQAS <b>MEGER</b> <b>KNNNKRWYFT</b>	60
61	<b>RE</b> QLENSPSR <b>RFG</b> VDPDKEL <b>SYR</b> QQAANLL <b>QDM</b> QRLNVS <b>QLT</b> INTAIVY <b>MHR</b> FYMIQSF	120
121	<b>TQ</b> FPGNSVAP <b>AAL</b> FLAAKVE <b>EQ</b> PKLEHVI <b>KVA</b> HTCLHPQ <b>ESL</b> PDTRSEA <b>YLQ</b> QVQDLVI	180
181	<b>LE</b> SIIQLTLG <b>FEL</b> TIDHPHT <b>HVV</b> KCTQLVR <b>ASK</b> DLAQTSY <b>FMAT</b> NSLHLT <b>TF</b> SLQYTPPV	240
241	<b>VAC</b> VCIHLLAC <b>KWS</b> NWEIPVS <b>TDG</b> KHWWEYV <b>DAT</b> VTLELLD <b>ELT</b> HEFLQIL <b>EKT</b> PNRLKRI	300
301	<b>WN</b> WRACEAAK <b>KTK</b> ADDRGTD <b>EKT</b> SEQTILN <b>MIS</b> QSSSDTT <b>IAG</b> LMSMSTS <b>TTS</b> AVPSLPV	360
361	<b>SE</b> ESSSNLTS <b>VE</b> MLPGKRWL <b>SSQ</b> PSFKLEP <b>TQ</b> GHRTSENL <b>ALT</b> GVDSHSLP <b>QD</b> GSNAFISQ	420
421	<b>KQ</b> NSKSVPSA <b>KV</b> SLKEYRAK <b>HAE</b> EAAQKR <b>QLE</b> NMEANVK <b>SQ</b> YAYAAQNL <b>LS</b> HHDSHSSV	480
481	<b>IL</b> KMPIEGSE <b>NPE</b> RFLEKA <b>DKT</b> ALKMRIP <b>VAG</b> GDKAASS <b>KPE</b> EIKMRIK <b>VHA</b> AADKHNS	540
541	<b>VE</b> DSVTKSRE <b>HKE</b> KHKTHPS <b>NHH</b> HHHHNHS <b>HK</b> SHSOLPV <b>GT</b> GNKRPGDP <b>KH</b> SSQTSNLA	600
601	<b>HK</b> TSLSSEF <b>SSS</b> STRKRG <b>PSE</b> ETGGAVF <b>KSS</b> SLNFSFP <b>SL</b> PTMGQMPG	660
661	<b>HSS</b> DTSGLSF <b>QSP</b> CKTRVP <b>HSK</b> LDKGPTG <b>ANG</b> HNTTQTI <b>DY</b> QDTVNMLH <b>SLL</b> SAQGVQP	720
721	<b>TQ</b> PTAFEFVR <b>PYS</b> DYLNPRS <b>GGI</b> SSRSNT <b>DK</b> PRPPPLPS <b>EPP</b> PLPLPK	780

Red: HIS6-tag Pink: Thrombin cleavage site blue: CycT1

**CycT1 wt<sup>1</sup> Amino Acid Sequence**

1	<b>ME</b> GERKNNNK <b>RW</b> YFTREQLE <b>NSP</b> SRRFGVD <b>PD</b> KELSYRQQ <b>AAN</b> LLQDMGQ <b>RL</b> NVSQLTIN	60
61	<b>TA</b> IVYMHRFY <b>MI</b> QSFTQFPG <b>NSV</b> APAALFL <b>AAK</b> VEEQPKK <b>LEH</b> VIKVAHT <b>CL</b> HPQESLPD	120
121	<b>TR</b> SEAYLQVQ <b>QD</b> LVIRESII <b>LQ</b> TLGFELTI <b>DHP</b> THVVKC <b>TQ</b> LVRASKDL <b>AQ</b> TSYFMATN	180
181	<b>SL</b> HLLTFSLQ <b>YTP</b> PVVACVC <b>IHL</b> ACKWSNW <b>EIP</b> VSTDGKH <b>WWE</b> YVDATVT <b>LE</b> LLDELTHE	240
241	<b>FL</b> QILEKTPN <b>RLK</b> RIWNWRA <b>CEA</b> AKTKAD <b>DRG</b> TDEKTSE <b>QT</b> ILNMISQS <b>SSD</b> TTIAGLM	300
301	<b>SM</b> STSTTSAV <b>PSL</b> PVSEES <b>SNL</b> TSVEMLP <b>GKR</b> WLSSQPS <b>FKL</b> EPTQGHR <b>TSE</b> NLALTGV	360
361	<b>DH</b> SLPQDGSN <b>AFI</b> SQKQNSK <b>SV</b> PSAKVSLK <b>EYR</b> AKHAEEL <b>AAQ</b> KRQLENM <b>EAN</b> VKSQYAY	420
421	<b>AA</b> QNLSSHHD <b>SHS</b> SVILKMP <b>IEG</b> SENPERP <b>FLE</b> KADKTAL <b>KMR</b> IPVAGD <b>KA</b> ASSKPEEI	480
481	<b>KM</b> RIKVHAAA <b>DKH</b> NSVEDSV <b>TKS</b> REHKEKH <b>KTH</b> PSNHHHH <b>HNH</b> SHKHSH <b>SQL</b> PVGTGNK	540
541	<b>RP</b> GDPKHSSQ <b>TSN</b> LAHKTYS <b>LSS</b> SFSSSSS <b>TRK</b> RGPSEET <b>GG</b> AVFDHPAK <b>IA</b> KSTKSSSL	600
601	<b>NF</b> SFPLPTM <b>GQ</b> MPGHSSDT <b>SGL</b> SFSQPSC <b>KTR</b> VPHSKLD <b>KG</b> PTGANGHN <b>TT</b> QTIDYQDT	660
661	<b>VN</b> MLHLLSA <b>QGV</b> QPTQPTA <b>FE</b> FVRPYSY <b>LN</b> PRSGGIS <b>RS</b> GNLTKPRP <b>PPL</b> PSEPPP	720
721	<b>LP</b> PLPK	780

blue: CycT1 sequence expressed in recombinant protein

<sup>1</sup>[NCBI/Protein](https://www.ncbi.nlm.nih.gov/protein/NP_001231.2) accession number NP\_001231.2